LG HB-152/153CE/JE

MODEL

SERVICE MANUAL

# PREFACE

## 1. SAFETY PRECAUTIONS

Follow basic safety precautions before using electrical appliances.

1. **READ ALL INSTRUCTIONS.**
2. To protect against electrical shock, do not immerse cord, plug, or appliance in water or other liquid.
3. Do not touch hot surfaces. Always use oven mitts when handling the hot bread pan of bread.
4. Close supervision is necessary when the appliance is used by or near children.
5. Unplug the unit from the outlet when not in use and before cleaning. Allow the breadmaker to cool before attaching or removing parts.
6. Do not touch moving parts.
7. Do not operate the appliance with a damaged cord or plug or after the appliance malfunctions, or it has been dropped or damaged in any manner. Return the appliance to the nearest authorized service facility for examination, repair, or mechanical adjustment.
8. Attachments that are not recommended or sold by the appliance manufacturer should not be used.
9. Do not use outdoors.
10. Do not let the cord hang over the edge of the table or counter or touch hot surfaces.
11. Do not place on or near a gas or electric burner, or in a heated oven.
12. To disconnect, grip the plug and pull it out from the wall outlet. Never pull the cord.
13. Do not use the appliance for other than the intended use.
14. This product is intended for household use only.

## 2. SERVICING PRECAUTIONS

The following cautions should be observed when troubleshooting.

a) As the appliance is made to be serviced only by properly qualified service personnel, it cannot be repaired by the user.

b) Before servicing, you should keep your hands dry. The power cord must be unplugged to protect electrical hazards.

c) Wear gloves when assembling or disassembling the appliance to avoid being injured by a sharp edge.

## 3. INSTALLATION INSTRUCTIONS

a) Place the breadmaker allowing at least 4-inch air space around sides and top of the breadmaker.

b) Always place the breadmaker on a heat-proof counter top or table during operation.

c) This breadmaker must be placed on a firm, flat, and solid surface.

d) Extension cords are available and may be used if care is exercised in their use.

**♦ EXTENSION CORD IS USED ♦**

1. The marked electrical rating of the extension cord should be at least as great as the appliance.
2. The longer cord should be arranged so it will not drape over the counter top or tabletop where it can be pulled by children or tripped over.

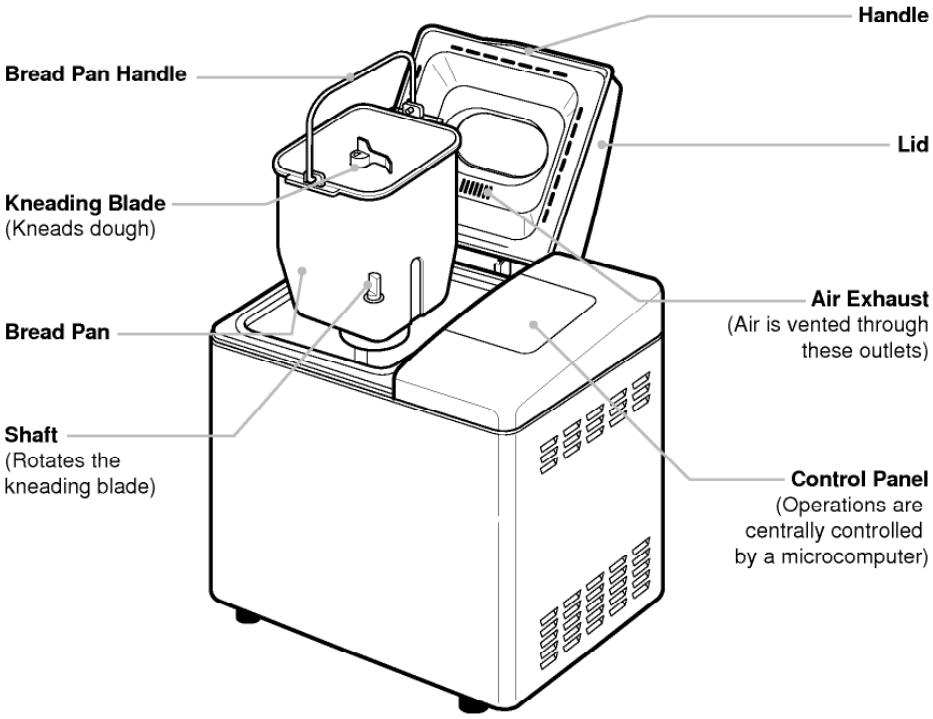
# 4. SPECIFICATIONS

| DESCRIPTION | | AUTOMATIC BREADMAKER |
|---|---|---|
| MODEL | | REFER TO THE COVER PAGE |
| POWER SUPPLY | | INDICATED ON THE RATING LABEL |
| POWER CONSUMPTION | MAIN HEATER | 550W |
| | KNEADING MOTOR | 100W |
| DIMENSIONS(W × D × H) | | APPROX. 13 3/4" × 9" × 13" (35 × 23 × 33cm) |
| WEIGHT | | APPROX. 13.9lb.(6.3kg) |
| TIMER | | 4:10 TO 13:00 HOURS DIGITAL TIMER |
| CORD LENGTH | | APPROX. 3 FEET, 3.4 INCHES (1.0m) |
| THERMAL FUSE | MAIN HEATER PROTECTOR | 291℉/144℃ |
| | KNEADING MOTOR PROTECTOR | 248℉/120℃ |
| ACCESSORIES | | MEASURING CUP, MEASURING SPOON(OPTION)<br>VIDEO TAPE (OPTION) |
| SERIAL NO. | | INDICATED ON THE RATING LABEL WITH PERMANENT INK |

# OPERATING INSTRUCTIONS

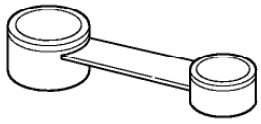
## 1. FEATURES AND CONTROL PANEL

### A. FEATURES




**ACCESSORIES**

Measuring Cup(OPTION)



Measuring Spoon (OPTION)

## B. CONTROL PANEL

❉ Control panel layout may vary according to the model

**REMAINING TIME INDICATOR**

This displays the remaining time for the program to be completed.

**BREAD PROGRAM INDICATOR**

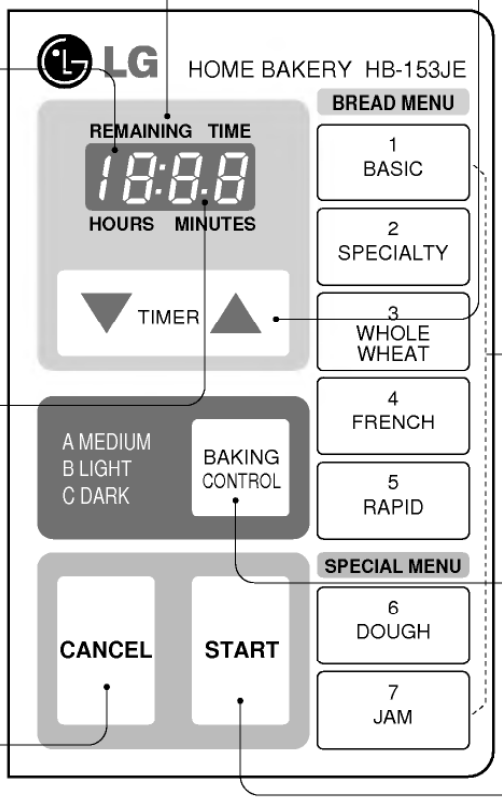
When PROGRAM SELECT pad is pressed, BREAD PROGRAM INDICATOR will display 1, 2, ...6 or 7 to indicate the selected program. After START pad is pressed, the indicator will disappear.

**BAKING CONTROL INDICATOR**

When BAKING CONTROL pad is pressed, BAKING CONTROL INDICATOR will display A, B, or C to indicate the selected baking control. After START pad is pressed, the indicator will disappear.

**CANCEL or STOP**

Press this pad to cancel a program. If you make a mistake when setting the delay timer, program, or baking control, press CANCEL pad and reenter the correct program.




**TIMER**

Press timer pad to set the time delay. The time will advance in 10 minutes interval from 4:10 to 13:00. This timer can not be used for BUTTER or CAKE or JAM program.

**PROGRAM SELECT**

Press this pad to select the program :
1. BASIC BREAD
2. SPECIALTY BREAD
3. WHOLE WHEAT
4. FRENCH BREAD
5. RAPID BREAD
6. DOUGH
7. BUTTER(for HB-150BE)
   JAM(for HB-150JE, 151JE, 152JE, 153JE)
   CAKE(for HB-150CE, 152CE)

**BAKING CONTROL**

Press this pad to select dark, medium, or light crust.

**START**

After setting the desired program, the baking control and timer(if needed), press this pad to start the program or timer count down.

**NOTE**

If you want to cancel the selected program, press the CANCEL pad for more than 1 second at any time during the cycle.

# 2. OPERATION CHECK

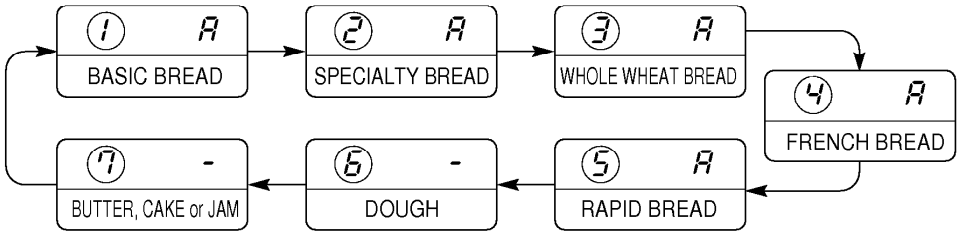
After installation or repair, the following sequence and results should be checked.

## 1. GENERAL OPERATION CHECK

(a) Plug the power cord into a prolonged electrical outlet.

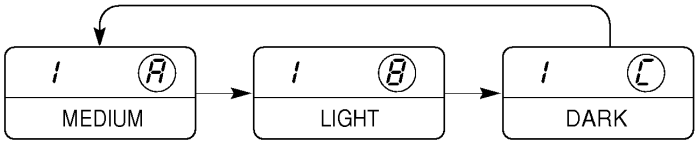
(b) The REMAINING TIME display 1:A and Basic Bread is set already.

(c) **Check the PROGRAM SELECT.**
Press the PROGRAM SELECT pad, then REMAINING TIME will advance as follows:

| MODEL | REMAINING TIME displays |
|---|---|
| Refer to the cover page |  |



(d) **Check the BAKING CONTROL** (except for BUTTER, CAKE or JAM and DOUGH program).
Press the BAKING CONTROL pad, then the REMAINING TIME will advance as follows:





(e) **Check the TIMER**

Set the timer for how long you want to wait before the bread is done (from 4:10 to 13:00 in 10 minutes interval).

1) Press TIMER UP PAD(▲) once, the REMAINING TIME DISPLAY 4:10.

2) When constant pressure is applied to the pad, the time will advance quickly from 4:10 to 13:00.

3) After 13:00 is set, press once more, then the REMAINING TIME displays 4:10.

4) If you pass the time that you wanted, press TIMER DOWN PAD (▼) to go back.

(f) After selecting PROGRAM SELECT and BAKING CONTROL, press the START pad. Then the colon on the REMAINING TIME blinks to indicate that the breadmaker starts to operate.

(g) Press the CANCEL(STOP) pad to cancel all baking processes. If the START pad is already pressed, just press the CANCEL(STOP) pad and hold for MORE THAN 1 SECOND.

**CAUTION**

1. The TIMER can not be used in BUTTER, CAKE AND JAM.
2. After setting the time, press the START pad to operate the breadmaker. Check to see if the colon blinks.

## 2. TEST KEY PROGRAM CHECK

You can check the operating of each load by using the self-diagnosis program.

(a) **OPERATION CHECK**

1) When power is supplied while pressing the TIMER UP PAD (▲) and TIMER DOWN PAD (▼) at the same time, the self-diagnosis program will start.

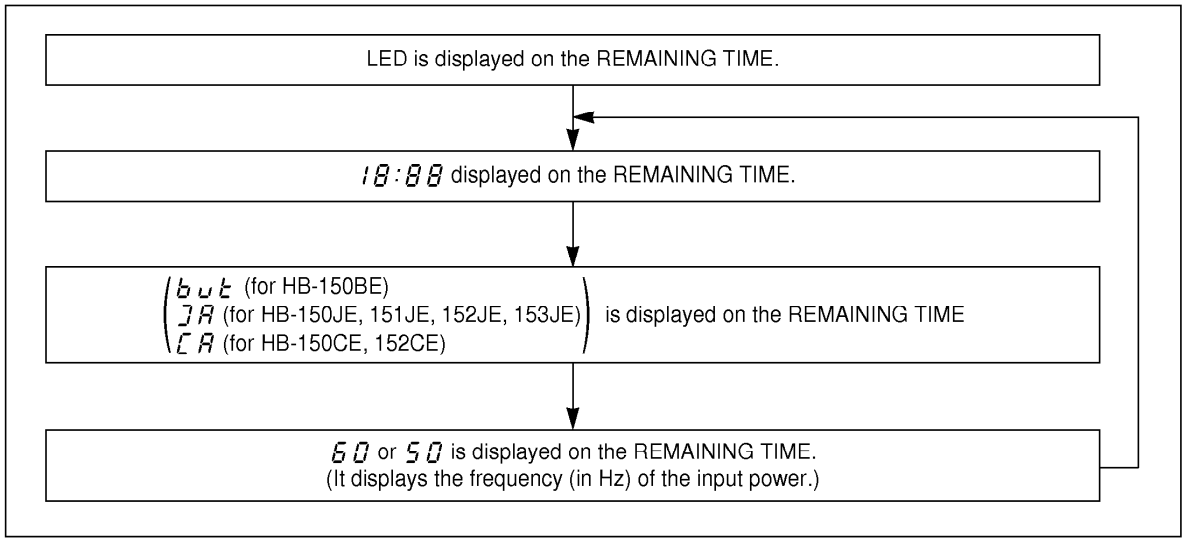
2) After checking 1), press the START pad, then the process will advance as follows.

| REMAINING TIME display | P:1 | P:2 | P:3 | P:0 → P:1 → |
|---|---|---|---|---|
| OPERATION | Kneading motor | Heater | No operation | ..... |

3) After 25 seconds from the starting points of processing, or if the CANCEL(STOP) pad is pressed, the self-diagnosis program will be canceled.

(b) **LED CHECK**

1) When power is supplied while pressing the BASIC and WHOLE WHEAT pads at the same time, the self-diagnosis program will start as follows.


LED is displayed on the REMAINING TIME.
18:88 displayed on the REMAINING TIME.
but (for HB-150BE)
JA (for HB-150JE, 151JE, 152JE, 153JE)
CA (for HB-150CE, 152CE)
is displayed on the REMAINING TIME
60 or 50 is displayed on the REMAINING TIME.
(It displays the frequency (in Hz) of the input power.)

(c) **BAKING PROCESS CHECK** (for the only BASIC BREAD)

1) When power is supplied while pressing the START pad and CANCEL(STOP) pad at the same time, the self-diagnosis program will start.

2) After checking the REMAINING TIME (1A displayed with beeps), press the START pad.

3) The breadmaker starts to operate and the baking process will advance as follows.

| Baking Process | Time set | Mix | 1st Knead | Rest | 2nd Knead | 1st Rise | Gas Squeeze | 2nd Rise | Gas Squeeze | 3rd Rise | Bake | Cool | Warm | End |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REMAIN-ING Time | 0:00 | 3:40 | 3:38 | 3:33 | 3:28 | 3:16 | 2:37 | 2:36 | 2:11 | 2:10 | 1:10 | 0:20 | [:H] | END |
| Baking Process indicator (OPTION) | - | KNEAD | | | | RISE | | | | | BAKE | COOL | - | - |

4) During checking 3), if the START pad was not pressed, the process will advance to the next process according as time pass.

5) After checking 4), press the CANCEL(STOP) pad to cancel the self-diagnosis program.

# 3. BREADMAKING PROGRAM

## 3-1) EXPLANATION OF BASIC PROGRAM (BASIC BREAD)

| Process | Time Delay | 1st Knead | | Rest | 2nd Knead | 1st Rise | Gas Squeeze | 2nd Rise | Gas Squeeze | 3nd Rise | Bake | Cool | Warm | End |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | Max 8:50 | 2min. | 5min. | 5min. | 12min. | 40min. | 4sec. | 26min. | 4sec. | 60min. | Approx. 50min. | Approx. 20min. | 3hours | - |
| Remaining Time | Max 13:00 | 3:40 | 3:38 | 3:33 | 3:28 | 3:16 | 2:37 | 2:36 | 2:11 | 2:10 | 1:10 | 0:20 | [:H] | End |
| Process Indicator (OPTION) | Time Set | Knead | | | | Rise | | | | | Bake | Cool | - | - |
| Heater | On/Off | | | | | | | | | | | Off | On/Off | - |
| Kneading Motor | Off | On/Off | On | Off | On | Off | On | Off | On | | Off | | | - |
| Temperature of oven case | 25°C/77°F | | 30°C/86°F | | | | 36°C/97°F | | | | 150°C/302°F<br>99°C/210°F<br>Temperature of bread | 50°C/122°F | | |
| Micro-Computer Contorl | Time Delay | Knead | | | | Rise | | | | | Bake | Cool | Warm | End |
| | The temperature is controled at 25°C (77°F). | Breadmaker starts to operate intermittently to proof flour splashed for 2 minutes. After mixing flour with water, kneading blade rotates with 250rpm for 5 minutes. After resting for 5 minutes, rotation again for 12 minutes. During knead and rest courses, the temperature is maintained at 30°C (86°F) by using the sensor and heater. | | | | Accurate temperature control is essential during rising, (Dough temperature: Approx. 36°C (97°F). Microcomputer controls the power supply accurately to keep suitable dough temperature. | | | | | Bread is baked with high power. Bread is baked with a crisp golden crust and a fluffy inside. | Immediately after baking, bread can not be eaten because it's too hot. | Breadmaker maintains the bread at a suitable temperature (50°C/122°F) for 3 hours. | - |

## 3-2) PROGRAM SPECIFICATIONS

(1) Basic Bread (3:40)

| Remark | Timer | Knead | | | | Rise | | | | | Bake | Cool | Warm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mix | 1' Knead | Rest | 2' Knead | 1' Rise | G/Squeeze | 2' Rise | G/Squeeze | 3' Rise | | | |
| Time | 13hr | 2min. | 5min. | 5min. | 12min. | 40min. | 4sec. | 26min. | 4sec. | 60min. | 50min. | 20min. | 3hr |

(2) Specialty Bread (3:40) ▼ Beep sounds 9 minutes before the end of 2nd kneading

| Remark | Timer | Knead | | | | Rise | | | | | Bake | Cool | Warm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mix | 1' Knead | Rest | 2' Knead | 1' Rise | G/Squeeze | 2' Rise | G/Squeeze | 3' Rise | | | |
| Time | 13hr | 2min. | 5min. | 5min. | 12min. | 40min. | 4sec. | 26min. | 4sec. | 60min. | 50min. | 20min. | 3hr |

(3) Whole Wheat Bread (4:00) ▼ Beep sounds 9 minutes before the end of 2nd kneading

| Remark | Timer | Pre Heat | Knead | | | | Rise | | | | | Bake | Cool | Warm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Mix | 1' Knead | Rest | 2' Knead | 1' Rise | G/Squeeze | 2' Rise | G/Squeeze | 3' Rise | | | |
| Time | 13hr | 20min. | 2min. | 11min. | 50min. | 12min. | 20min. | 4sec. | 15min. | 4sec. | 40min. | 50min. | 20min. | 3hr |

(4) French Bread (4:00) ▼ Beep sounds 9 minutes before the end of 2nd kneading

| Remark | Timer | Pre Heat | Knead | | | | Rise | | | | | Bake | Cool | Warm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Mix | 1' Knead | Rest | 2' Knead | 1' Rise | G/Squeeze | 2' Rise | G/Squeeze | 3' Rise | | | |
| Time | 13hr | 20min. | 2min. | 11min. | 50min. | 12min. | 20min. | 4sec. | 15min. | 4sec. | 40min. | 50min. | 20min. | 3hr |

(5) Rapid Bread (1:59) ▼ Beep sounds 5 minutes before the end of 2nd kneading

| Remark | Timer | Knead | | | | Rise | | | | | Bake | Cool | Warm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mix | 1' Knead | Rest | 2' Knead | 1' Rise | G/Squeeze | 2' Rise | G/Squeeze | 3' Rise | | | |
| Time | 13hr | 2min. | 5min. | 5min. | 7min. | 13min. | 4sec. | | | 52min. | 35min. | | 3hr |

(6) Dough (1:03)

| Remark | Remaining | Knead | | | | Rise | |
|---|---|---|---|---|---|---|---|
| | | Mix | 1' Knead | Rest | 2' Knead | 1' Rise | G/Squeeze |
| Time | 13hr | 2min. | 4min. | 5min. | 12min. | 40min. | 4sec. |

(7) Butter

| Remark | Timer | Knead |
|---|---|---|
| Time | | 01min.~30min. |

(8) Cake (1:10)

| Remark | Timer | Bake | Cool | Warm |
|---|---|---|---|---|
| Time | | 60min. | 10min. | 3hr |

(9) Jam (1:20)

| Remark | Timer | Pre Bake | Bake | Cool |
|---|---|---|---|---|
| Time | | 10min. | 60min. | 10min. |

**NOTE**

1. The Specialty Bread, Whole Wheat Bread, and French Bread Programs contain an audible signal (8 beeps) which sounds 9 minutes before the end of the 2nd knead (5 minutes before the end of the 2nd knead for Rapid Program). For specialty bread, add additional ingredients at this time (i.e. raisins, nut, vegetables, etc.).
2. The Basic Bread, Specialty Bread, Whole Wheat Bread, and French Bread Programs contain an audible signals (4 beeps) at the end of the baking cycle (20 minutes of cooling time remain).
3. The beeper beeps 8 times at the end of each program to indicate the program is finished.

# DISASSEMBLY INSTRUCTION

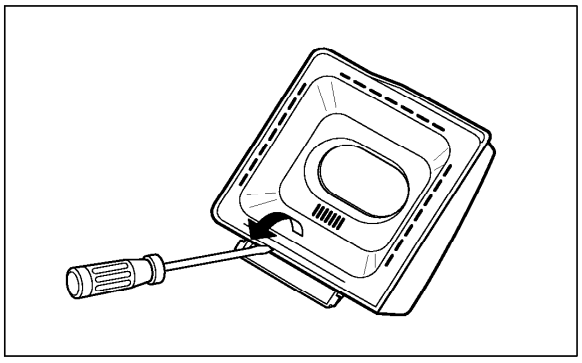
**• PAY ATTENTION TO THE FOLLOWING IN SERVICE AND INSPECTION.**

(a) Protect against electric shock:
Pull out the plug for service and inspection. Don't touch live components when service and inspection are made.

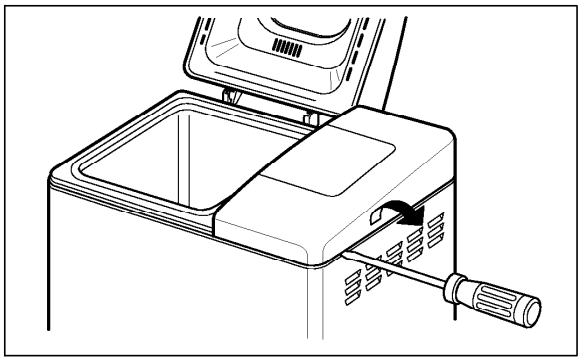
(b) Restore the original conditions of components and wire layout; Safety provisions are made by using tube and the other insulation material and by preventing wire from contact with heat generating or movable components by means of layout and binding. They should be restored to the original conditions.

(c) Safety inspection after service is required as follows: confirm that screws, nuts, components, and wires removed for service are restored. Check the deterioration around service components, and check for insulation.

**1**. Turn the Top Cover assembly upside down and pull out the inner cover and the viewing window.

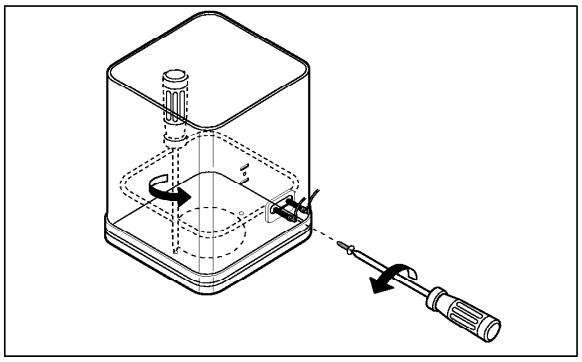


**2**. Pull out the control panel.

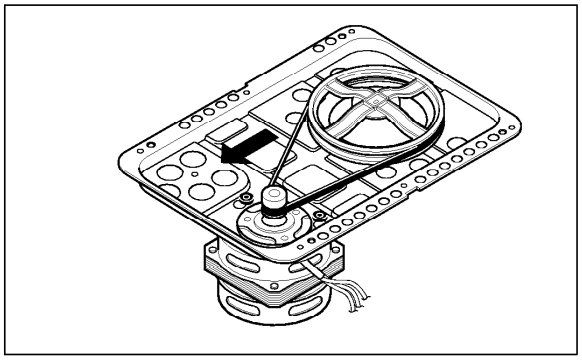


**3**. After disconnecting leads, remove the oven case main assembly from the chassis by unscrewing two machine screws fixing oven case main assembly.

**4**. Remove the leadwire assembly and sheath heater assembly from the oven case main assembly.



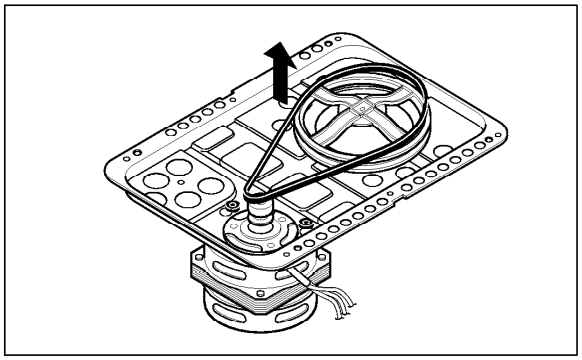
**5**. Turn the breadmaker upside down. Remove four legs and base cover by unscrewing. Pull out the power cord assembly on the bottom of the unit. Remove the chassis assembly from the out case.



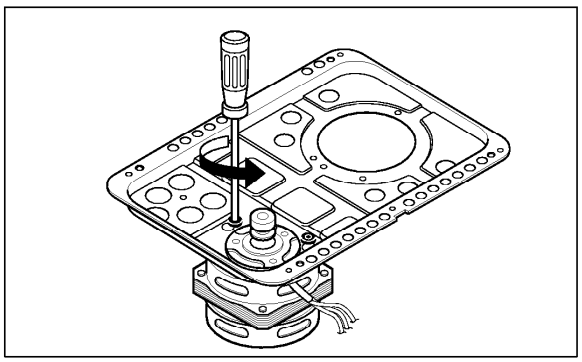
**6**. Remove the poly V-belt.

Remove nut and pulley washer, then kneading pulley can be disconnected.

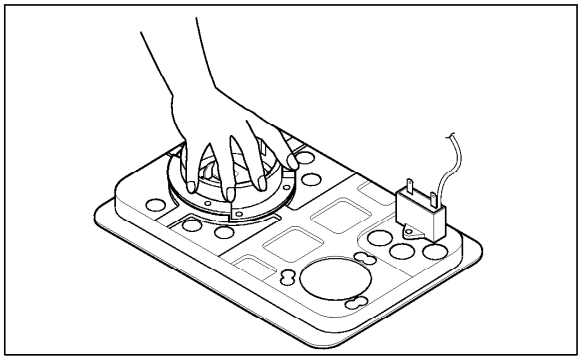
Remove the E-ring, washer, and pulley shaft assembly.



**7**. Remove the motor pulley from the motor shaft by removing one machine screw. Remove three fixing screws, then the kneading motor and motor cushion can be disassembled.

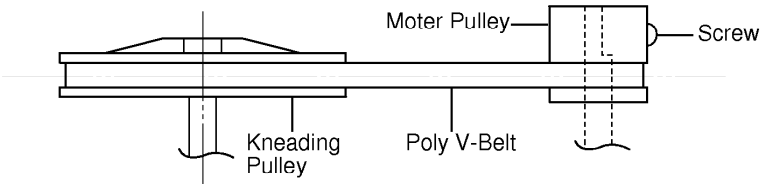


**8**. Turn the chassis upside down and remove the oven base and the capacitor.



**CAUTION**

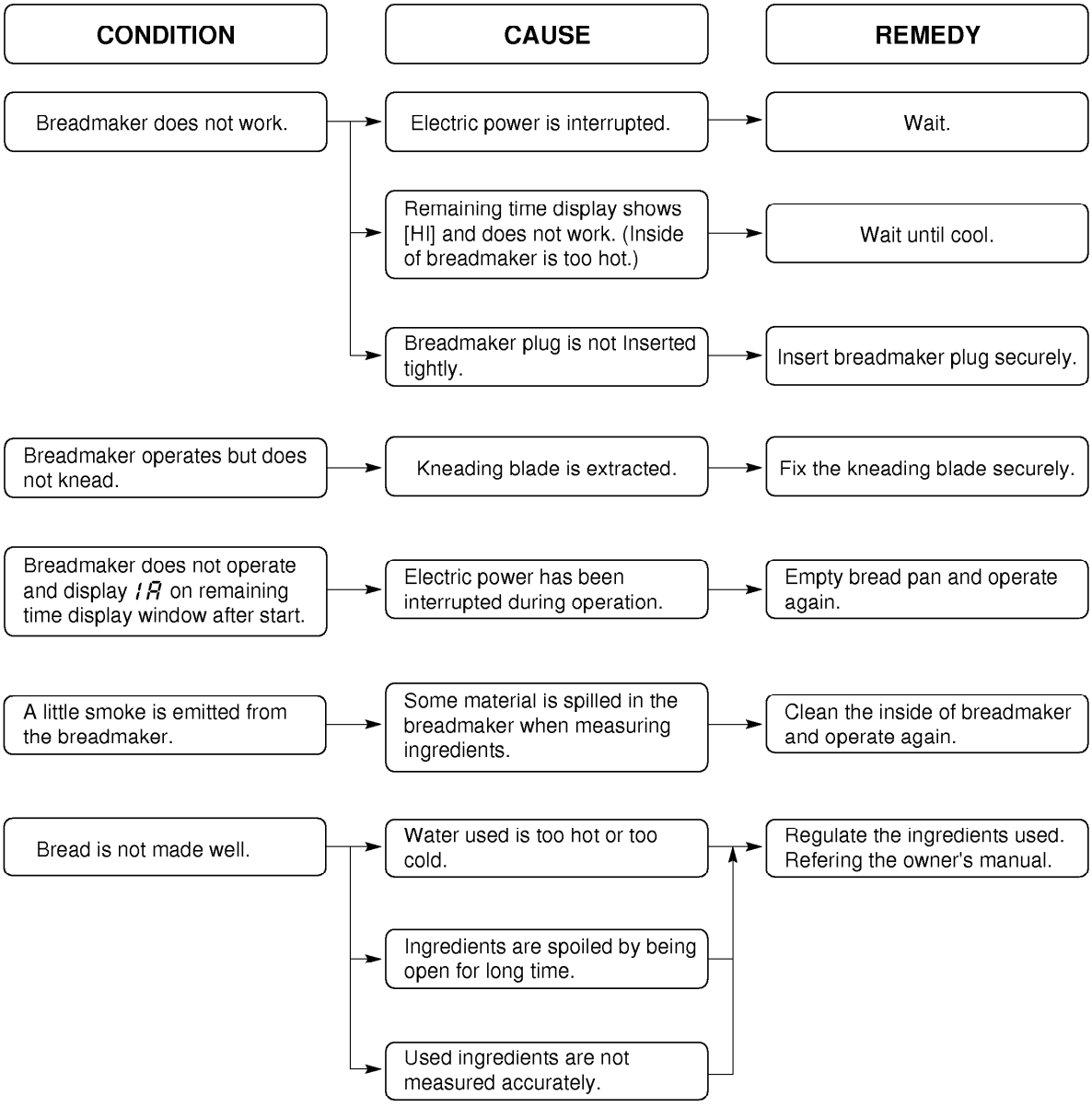
When you reassemble the kneading pulley, poly V-belt, and motor pulley after service or repair; adjust the center of the kneading pulley, poly V-belt, and motor pulley as follows.



# TROUBLESHOOTING GUIDE

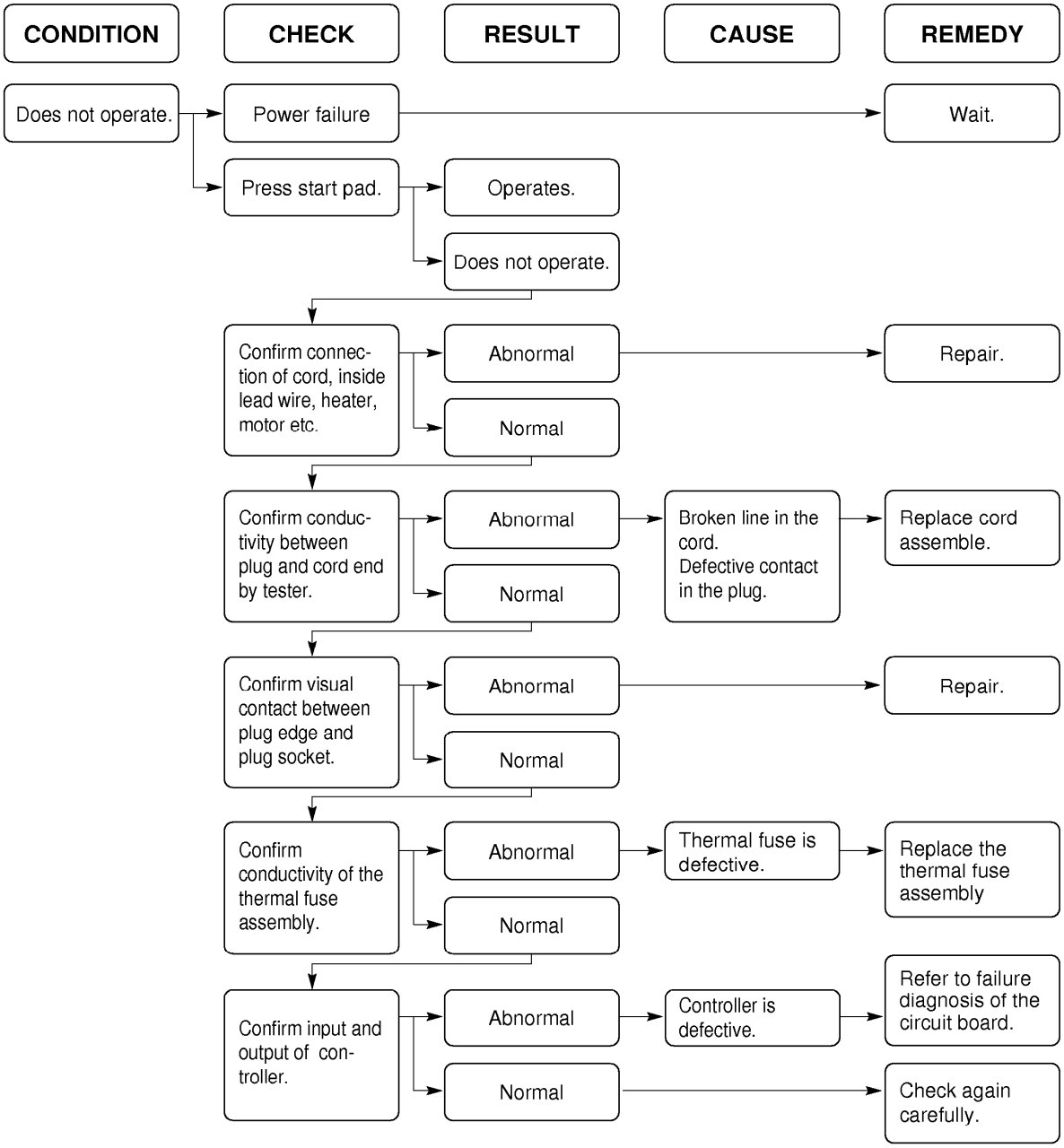
When you get a complaint from your customer, evaluate the complaint carefully before going to the customer's home. If there are the following symptoms, please instruct the customer for the proper use of the breadmaker. This can save an unnecessary service call.

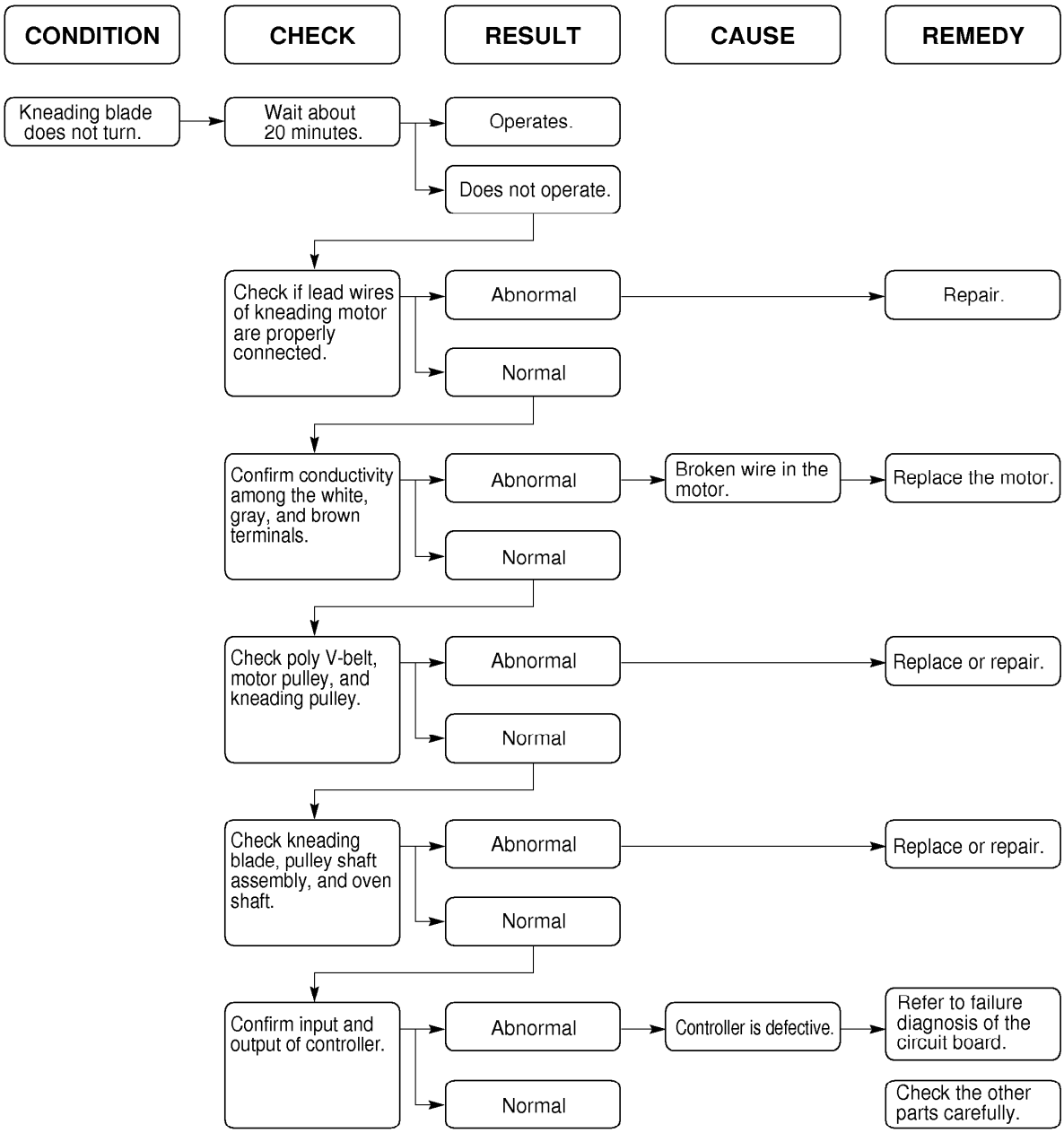
## A. CHECKING POINTS BEFORE SERVICE

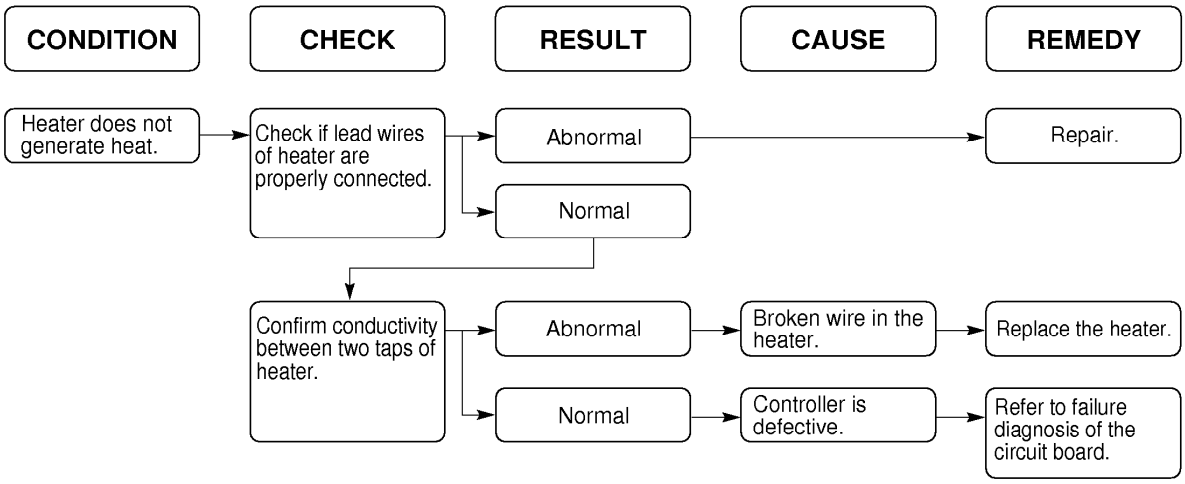

CONDITION
CAUSE
REMEDY
Breadmaker does not work.
Electric power is interrupted.
Wait.
Remaining time display shows [HI] and does not work. (Inside of breadmaker is too hot.)
Wait until cool.
Breadmaker plug is not Inserted tightly.
Insert breadmaker plug securely.
Breadmaker operates but does not knead.
Kneading blade is extracted.
Fix the kneading blade securely.
Breadmaker does not operate and display E1 on remaining time display window after start.
Electric power has been interrupted during operation.
Empty bread pan and operate again.
A little smoke is emitted from the breadmaker.
Some material is spilled in the breadmaker when measuring ingredients.
Clean the inside of breadmaker and operate again.
Bread is not made well.
Water used is too hot or too cold.
Regulate the ingredients used. Refering the owner's manual.
Ingredients are spoiled by being open for long time.
Used ingredients are not measured accurately.

## B. TROUBLESHOOTING GUIDE EXCEPT CIRCUIT BOARD

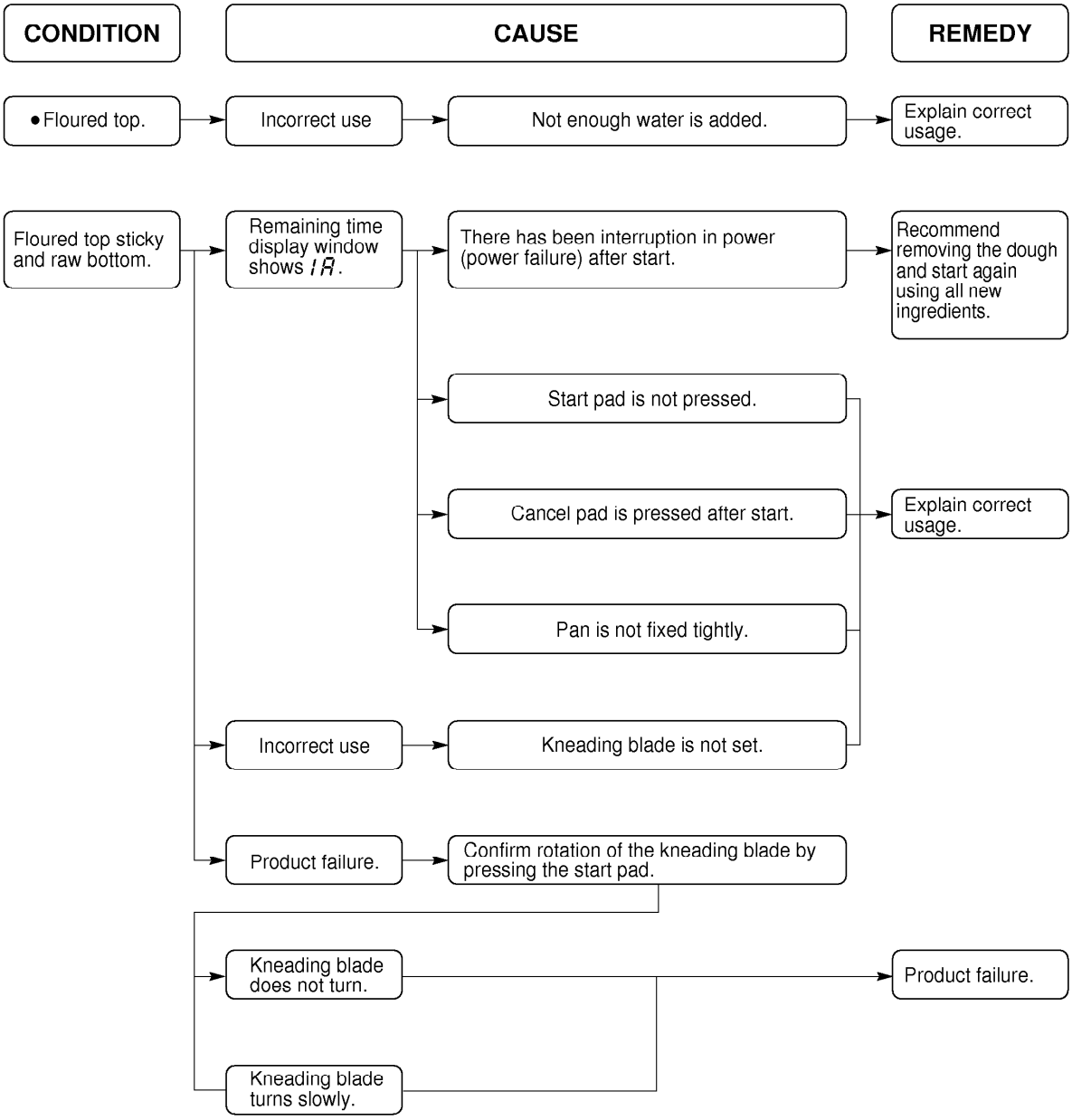
**(TROUBLE 1) Breadmaker does not operate.**

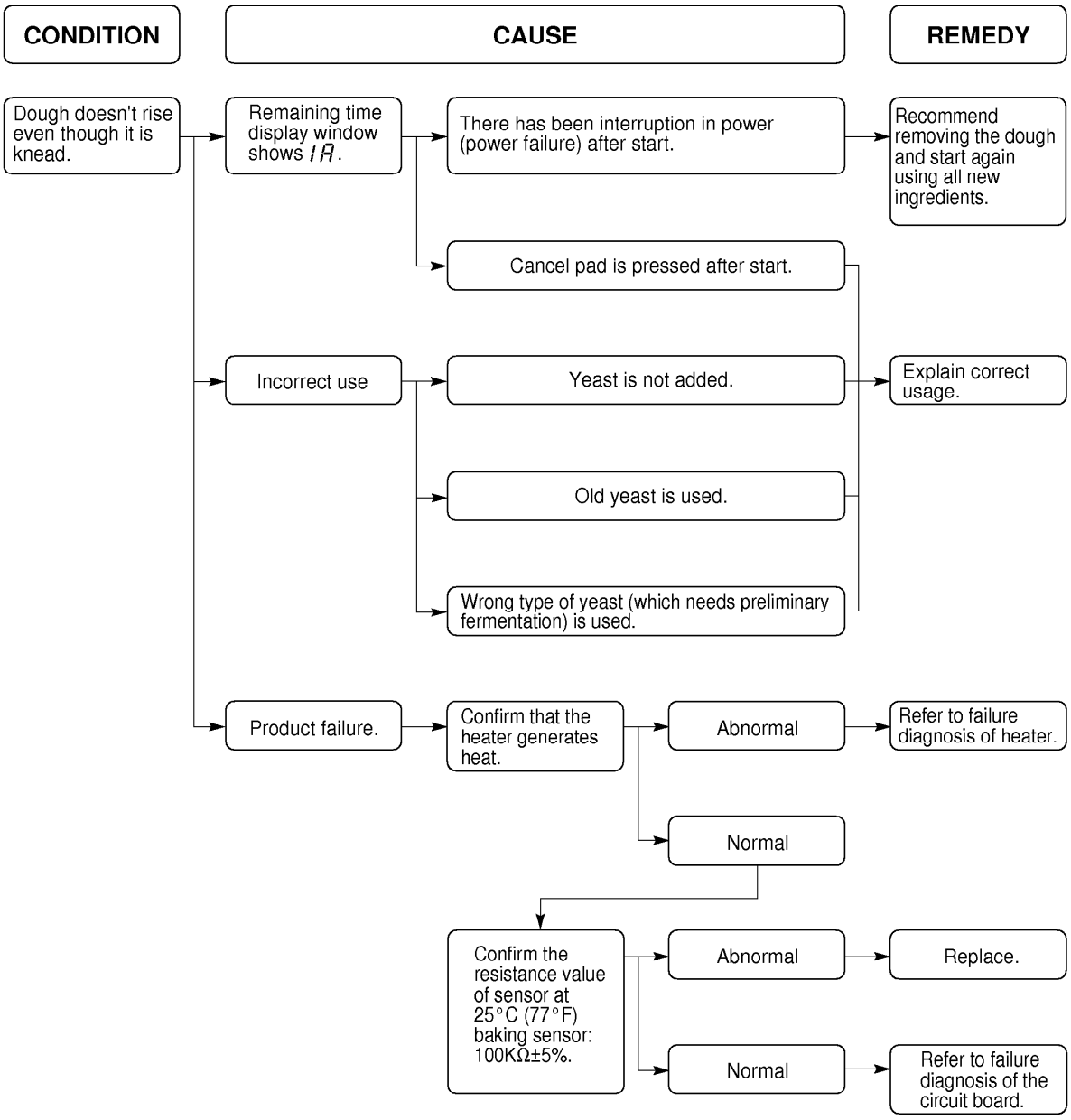


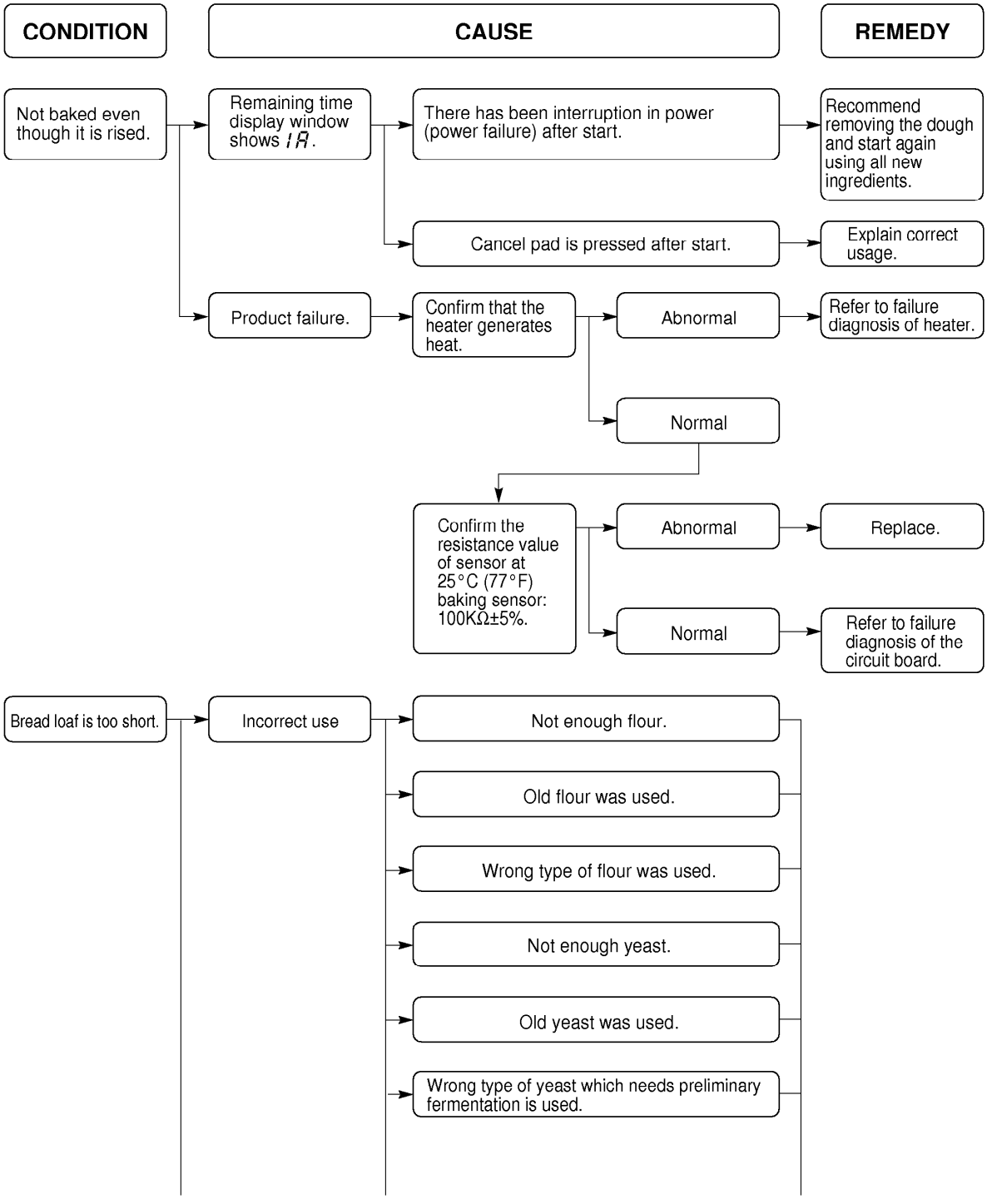

CONDITION
CHECK
RESULT
CAUSE
REMEDY
Kneading blade does not turn.
Wait about 20 minutes.
Operates.
Does not operate.
Check if lead wires of kneading motor are properly connected.
Abnormal
Repair.
Normal
Confirm conductivity among the white, gray, and brown terminals.
Abnormal
Broken wire in the motor.
Replace the motor.
Normal
Check poly V-belt, motor pulley, and kneading pulley.
Abnormal
Replace or repair.
Normal
Check kneading blade, pulley shaft assembly, and oven shaft.
Abnormal
Replace or repair.
Normal
Confirm input and output of controller.
Abnormal
Controller is defective.
Refer to failure diagnosis of the circuit board.
Normal
Check the other parts carefully.

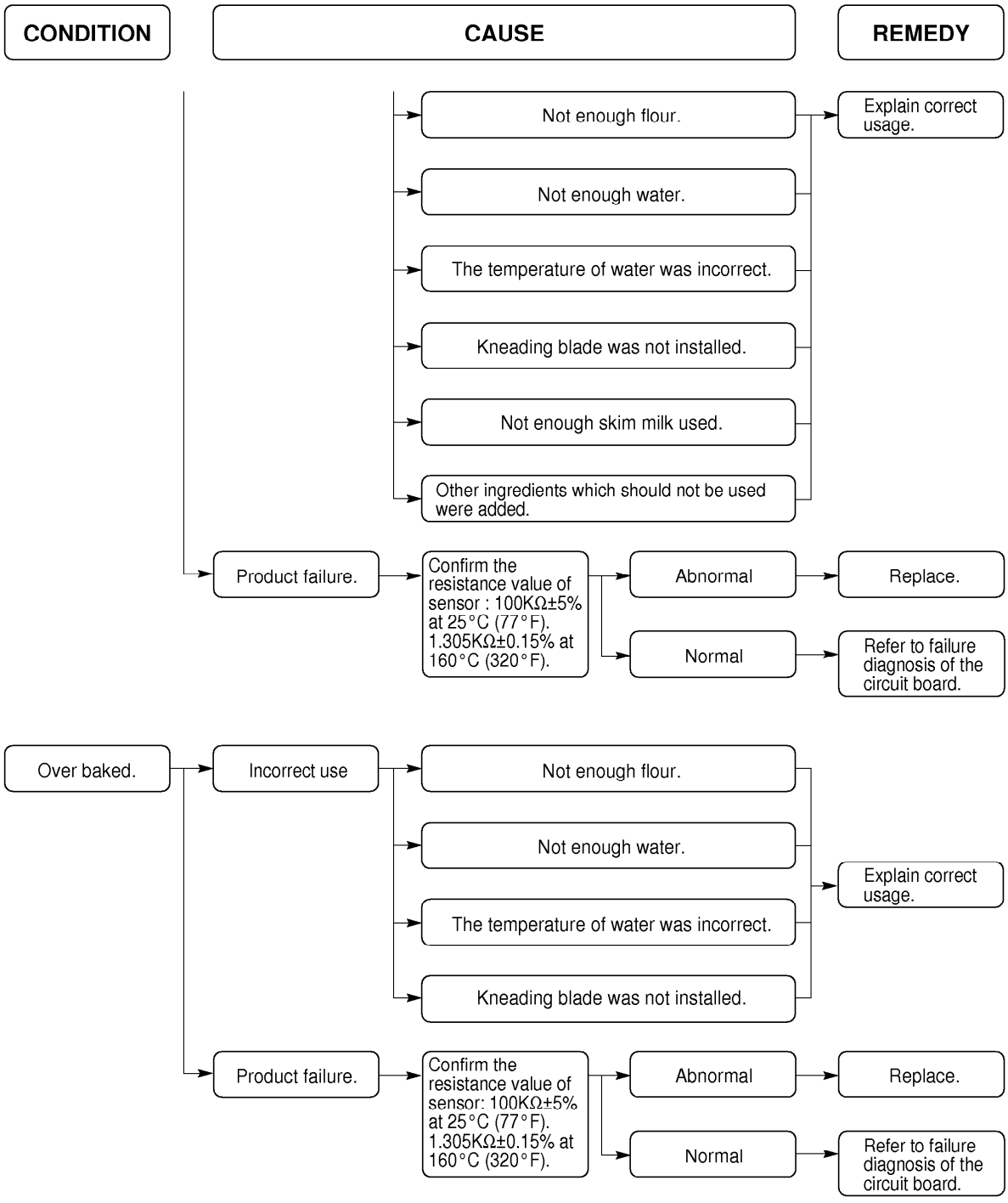

CONDITION
CHECK
RESULT
CAUSE
REMEDY
Heater does not generate heat.
Check if lead wires of heater are properly connected.
Abnormal
Repair.
Normal
Confirm conductivity between two taps of heater.
Abnormal
Broken wire in the heater.
Replace the heater.
Normal
Controller is defective.
Refer to failure diagnosis of the circuit board.

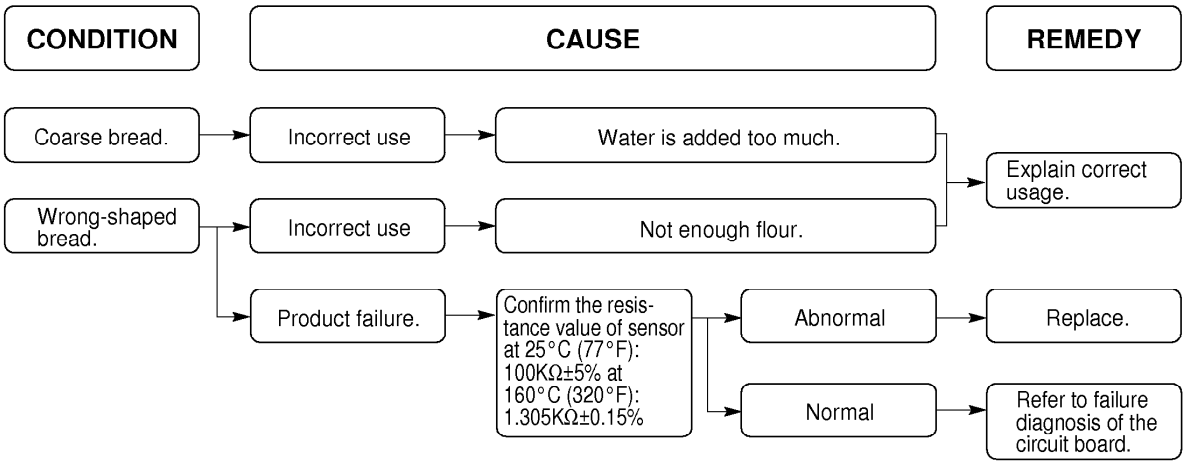
## (TROUBLE 2) Poor bread is made.


CONDITION
CAUSE
REMEDY
• Floured top.
Incorrect use
Not enough water is added.
Explain correct usage.
Floured top sticky and raw bottom.
Remaining time display window shows 1A.
There has been interruption in power (power failure) after start.
Recommend removing the dough and start again using all new ingredients.
Start pad is not pressed.
Cancel pad is pressed after start.
Explain correct usage.
Pan is not fixed tightly.
Incorrect use
Kneading blade is not set.
Product failure.
Confirm rotation of the kneading blade by pressing the start pad.
Kneading blade does not turn.
Product failure.
Kneading blade turns slowly.

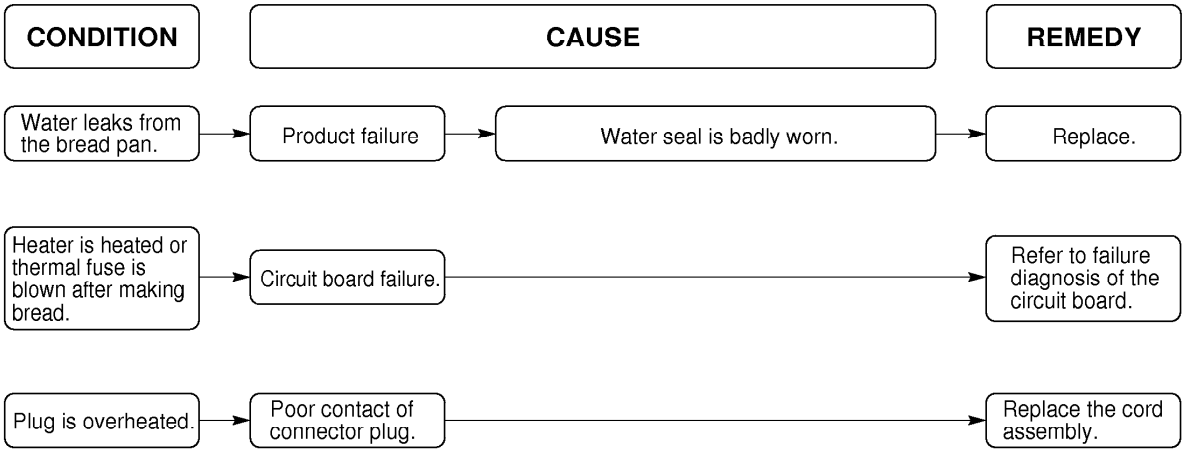

CONDITION
CAUSE
REMEDY
Dough doesn't rise even though it is knead.
Remaining time display window shows 1A.
There has been interruption in power (power failure) after start.
Recommend removing the dough and start again using all new ingredients.
Cancel pad is pressed after start.
Incorrect use
Yeast is not added.
Explain correct usage.
Old yeast is used.
Wrong type of yeast (which needs preliminary fermentation) is used.
Product failure.
Confirm that the heater generates heat.
Abnormal
Refer to failure diagnosis of heater.
Normal
Confirm the resistance value of sensor at 25°C (77°F) baking sensor: 100KΩ±5%.
Abnormal
Replace.
Normal
Refer to failure diagnosis of the circuit board.

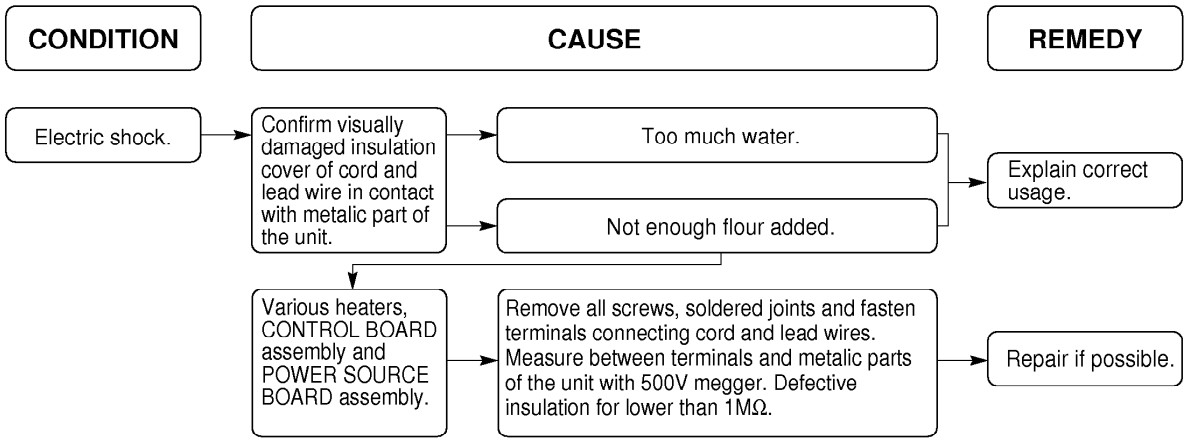

CONDITION
CAUSE
REMEDY
Not baked even though it is rised.
Remaining time display window shows 1A.
There has been interruption in power (power failure) after start.
Recommend removing the dough and start again using all new ingredients.
Cancel pad is pressed after start.
Explain correct usage.
Product failure.
Confirm that the heater generates heat.
Abnormal
Refer to failure diagnosis of heater.
Normal
Confirm the resistance value of sensor at 25°C (77°F) baking sensor: 100KΩ±5%.
Abnormal
Replace.
Normal
Refer to failure diagnosis of the circuit board.
Bread loaf is too short.
Incorrect use
Not enough flour.
Old flour was used.
Wrong type of flour was used.
Not enough yeast.
Old yeast was used.
Wrong type of yeast which needs preliminary fermentation is used.


CONDITION
CAUSE
REMEDY
Not enough flour.
Explain correct usage.
Not enough water.
The temperature of water was incorrect.
Kneading blade was not installed.
Not enough skim milk used.
Other ingredients which should not be used were added.
Product failure.
Confirm the resistance value of sensor : 100KΩ±5% at 25°C (77°F). 1.305KΩ±0.15% at 160°C (320°F).
Abnormal
Replace.
Normal
Refer to failure diagnosis of the circuit board.
Over baked.
Incorrect use
Not enough flour.
Not enough water.
The temperature of water was incorrect.
Kneading blade was not installed.
Explain correct usage.
Product failure.
Confirm the resistance value of sensor: 100KΩ±5% at 25°C (77°F). 1.305KΩ±0.15% at 160°C (320°F).
Abnormal
Replace.
Normal
Refer to failure diagnosis of the circuit board.




## (TROUBLE 3) Other problems.

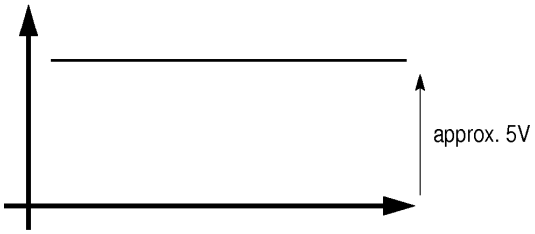
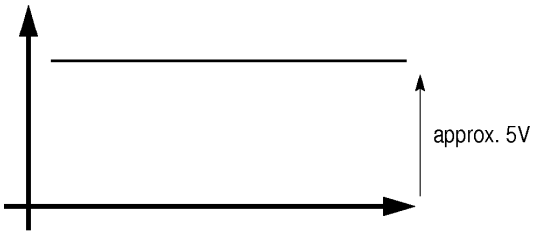


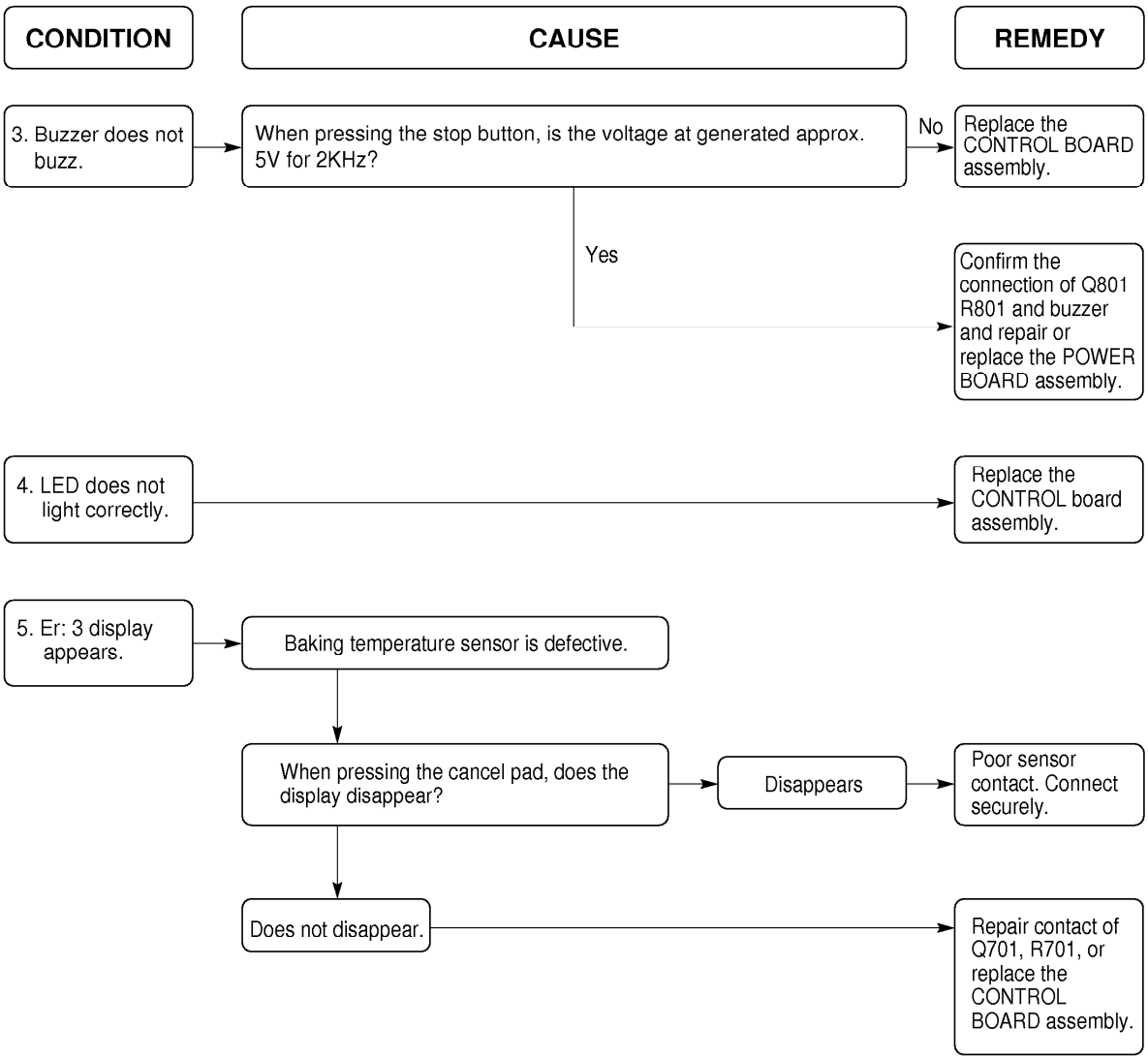

CONDITION
CAUSE
REMEDY
Electric shock.
Confirm visually damaged insulation cover of cord and lead wire in contact with metalic part of the unit.
Too much water.
Not enough flour added.
Explain correct usage.
Various heaters, CONTROL BOARD assembly and POWER SOURCE BOARD assembly.
Remove all screws, soldered joints and fasten terminals connecting cord and lead wires. Measure between terminals and metalic parts of the unit with 500V megger. Defective insulation for lower than 1MΩ.
Repair if possible.

## (TROUBLE 4) Some letter is displayed on remaining time display window.

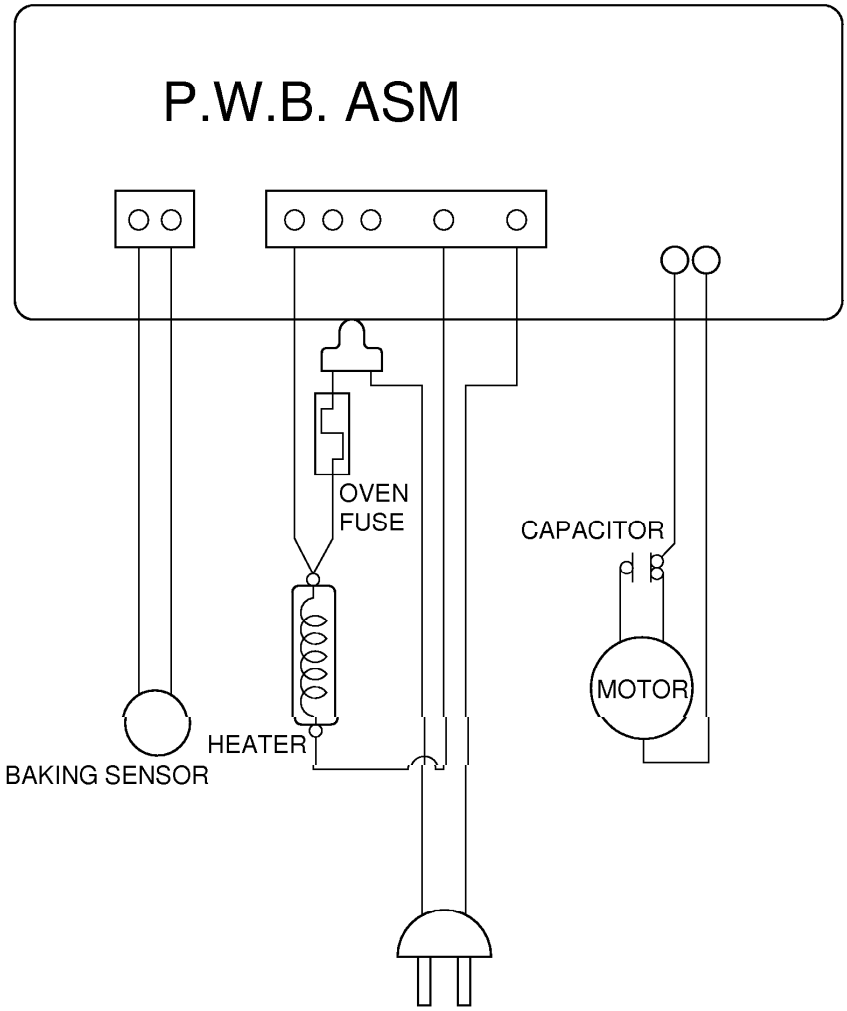
| Letter | Cause | Remedy |
|---|---|---|
| H 1 | The temperature of oven area is too hot. (higher than 40℃/104℉) | Press CANCEL pad for cooling and start again. |
| E-3 | Baking sensor is defective (Resistance value is not 100KΩ±5% at 25℃ (77℉): and 1.305KΩ±0.15% at 160℃ (320℉)): | Repair or replace. |

## C. FAILURE DIAGNOSIS OF THE CIRCUIT BOARD

| CONDITION | CAUSE | REMEDY |
|---|---|---|
| 1. Kneading motor does not turn. | See page 9 (OPERATION CHECK) | |
| | Is the signal generated at pin No. 26 of IC1 as follows?   | Yes → Confirm the connection of Q601 R601 and repair or replace the POWER SOURCE BOARD assembly.<br>No → Replace the CONTROL board assembly. |
| 2. Main heater does not generate. | See page 9 (OPERATION CHECK) | |
| | Is the signal generated at pin No. 27 of IC1 as follows?   | Yes → Confirm connection of Q602, R602 repair or replace the POWER SOURCE BOARD assembly.<br>No → Replace the CONTROL board assembly. |


CONDITION
CAUSE
REMEDY
3. Buzzer does not buzz.
When pressing the stop button, is the voltage at generated approx. 5V for 2KHz?
No
Replace the CONTROL BOARD assembly.
Yes
Confirm the connection of Q801 R801 and buzzer and repair or replace the POWER BOARD assembly.
4. LED does not light correctly.
Replace the CONTROL board assembly.
5. Er: 3 display appears.
Baking temperature sensor is defective.
When pressing the cancel pad, does the display disappear?
Disappears
Poor sensor contact. Connect securely.
Does not disappear.
Repair contact of Q701, R701, or replace the CONTROL BOARD assembly.

# BLOCK DIAGRAM



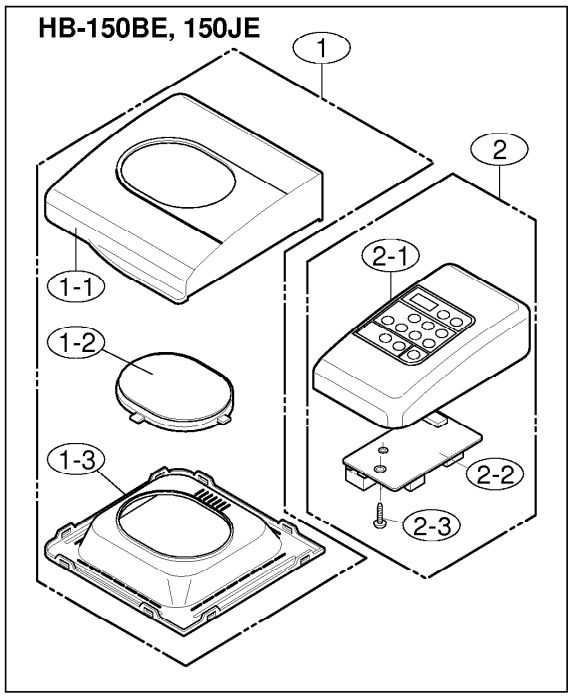

**REMARKS**

1. :HOUSING
2. :TERMINAL BLOCK
3. :RECEPTACLE & TAP
4. :NYLON CONNECTOR

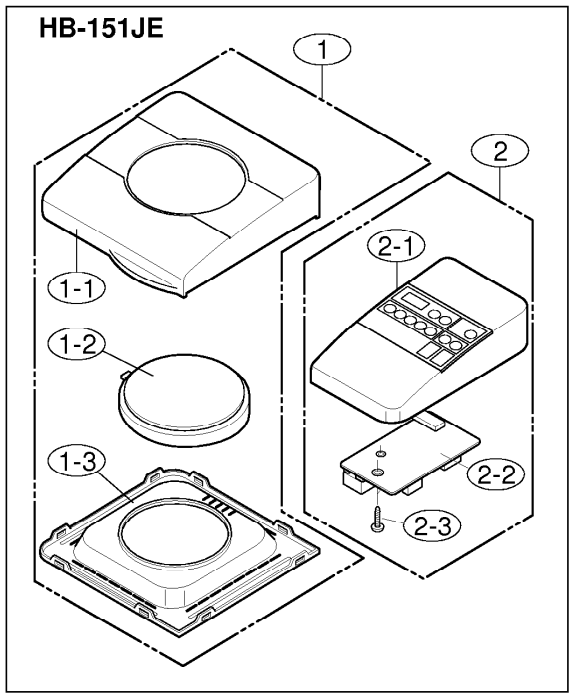
# EXPLODED VIEW & PARTS LIST

## A. EXPLODED VIEW

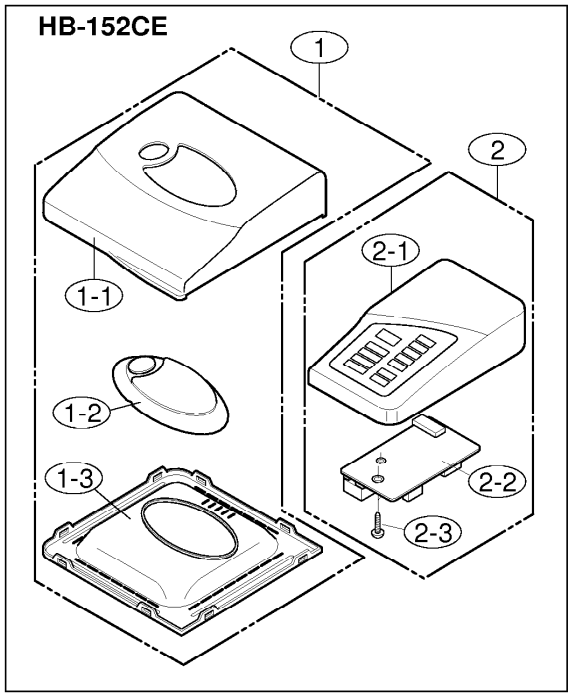
HB-150BE, 150JE



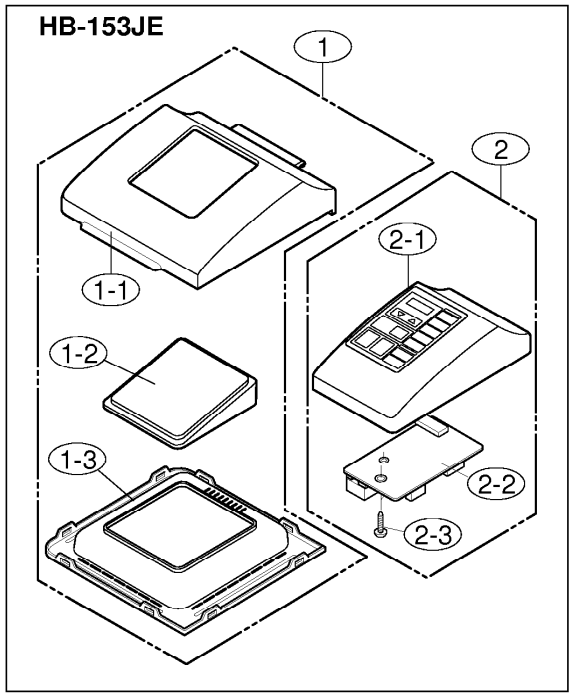

HB-151JE

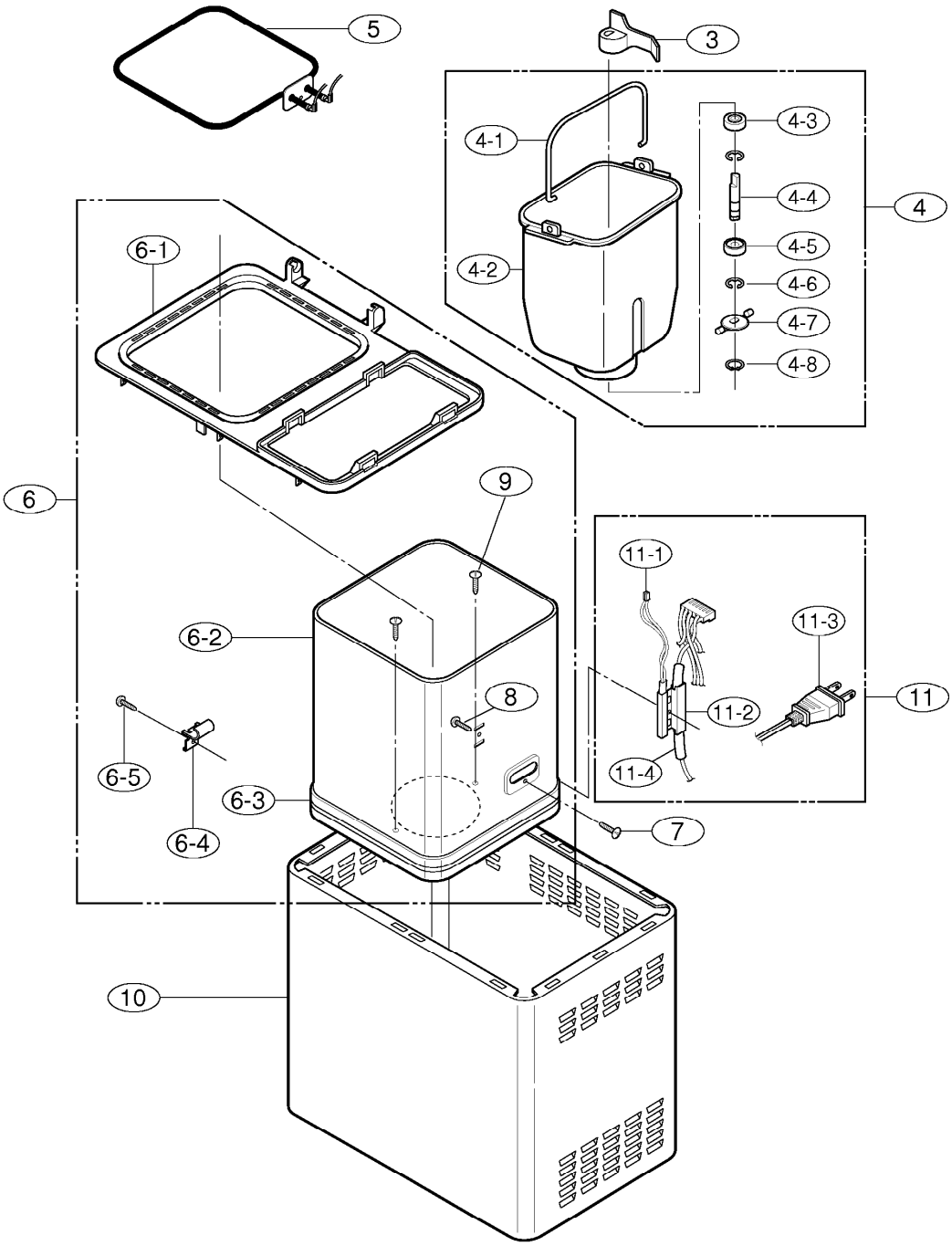


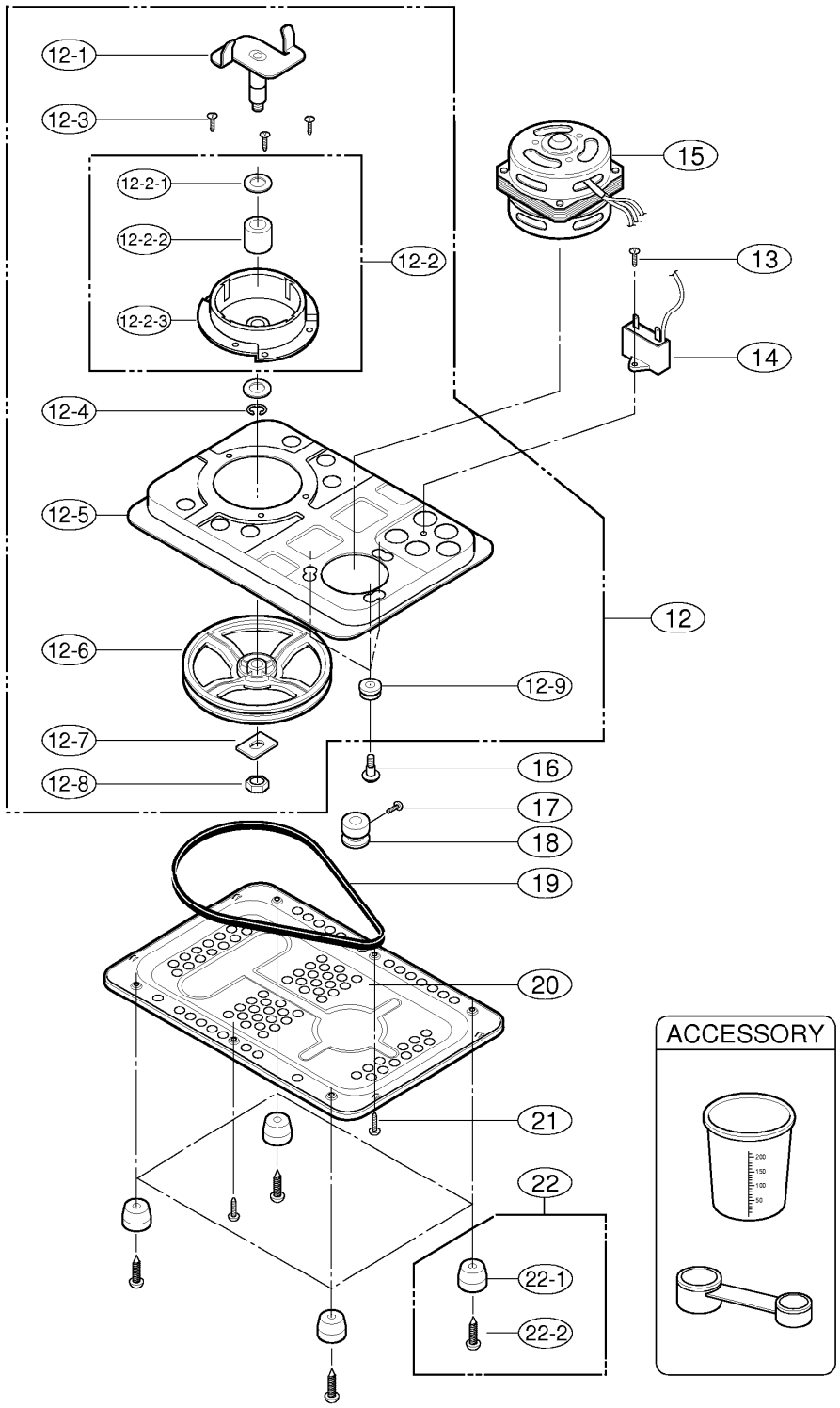

HB-152CE




HB-153JE




5
3
4-1
4-3
4-4
4
4-5
4-2
4-6
4-7
4-8
6-1
6
9
11-1
11-3
6-2
8
11-2
11
6-5
11-4
6-3
7
6-4
10


12-1
12-3
12-2-1
12-2-2
12-2-3
12-2
15
13
14
12-4
12-5
12
12-6
12-9
12-7
12-8
16
17
18
19
20
21
22
22-1
22-2
ACCESSORY

# B. PARTS LIST

NSP : NOT SERVICEABLE PARTS

| LOCA. No. | DESCRIPTION | PART No. | | | | Q'TY | SVC MARK | REMARKS |
|---|---|---|---|---|---|---|---|---|
| | | HB-150E | HB-151E | HB-152E | HB-153E | | | |
| 1 | TOP COVER ASM | 3551FB2072A | 3551FB2073A | 3551FB2077A | 3551FB2085A | 1 | | |
| 1-1 | TOP COVER | 3122FB1043A | 3122FB1046A | 3122FB1048A | 3122FB1051A | 1 | NSP | |
| 1-2 | VIEWING WINDOW | 3790FB2063A | 3790FB2070A | 3790FB3085A | 3790FB2080A | 1 | NSP | |
| 1-3 | INNER COVER | 3550FB1044A | 3550FB1047A | 3550FB2068A | 3550FB2081A | 1 | NSP | |
| 2 | CONTROLLER ASM | | | | 4781FB2086A | | NSP | 100V/50Hz,JE |
| | | | | | 4781FB2086B | | NSP | 100V/60Hz,JE |
| | | 4781FB2065A | | | | | NSP | 120V/60Hz,BE |
| | | 4781FB2065B | 4781FB2083A | | | 1 | NSP | 120V/60Hz,JE |
| | | | | 4781FB2084A | | | NSP | 120V/60Hz,CE |
| | | | 4781FB2083C | | | | NSP | 230V/50Hz,JE |
| | | 4781FB2065C | | 4781FB2084B | | | NSP | 230V/50Hz,CE |
| 2-1 | CONTROL PANEL | 3572FB1042A | 3572FB1041A | 3572FB1049A | 3572FB1052A | 1 | | |
| 2-2 | P.W.B. ASM | | | | 6871FX1005F | | | 100V/50Hz,JE |
| | | | | | 6871FX1005G | | | 100V/60Hz,JE |
| | | 6871FX1001A | | | | | | 120V/60Hz,BE |
| | | 6871FX1001E | 6871FX1004A | | 6871FX1005A | 1 | | 120V/60Hz,JE |
| | | | | 6871FX1002A | | | | 120V/60Hz,CE |
| | | 6871FX1001C | 6871FX1004C | 6871FX1002E | 6871FX1005C | | | 230V/50Hz,JE |
| | | 6871FX1017C | | 6871FX1002C | | | | 230V/50Hz,CE |
| | | | | 6871FX1002F | | | | 230V/50Hz,CE(CHA1) |
| 2-3 | SCREW | 1TTL0402818 | | | | 2 | NSP | D4×L12 |
| 3 | KNEADING BLADE | 5832FB3011A | | | | 1 | | |
| 4 | OVEN ASM | 5306FB2074A | | | | 1 | | |
| 4-1 | OVEN HANDLE | 3650FB4015A | | | | 1 | | |
| 4-2 | OVEN | 5306FB1065A | | | | 1 | NSP | |
| 4-3 | WATER SEAL | 4036FB4082A | | | | 1 | | 230V/50Hz |
| | | | | | | | NSP | |
| 4-4 | OVEN SHAFT | 4370FB4081A | | | | 1 | NSP | |
| 4-5 | BALL BEARING | 4280FB4016A | | | | 1 | | 230V/50Hz |
| | | | | | | | NSP | |
| 4-6 | E-RING | 4O80070A | | | | 1 | NSP | |
| 4-7 | OVEN ARM | 4260FB4085A | | | | 1 | NSP | |
| 4-8 | C-RING | | | | | 1 | NSP | |
| 5 | HEATER ASM | 5301FB2059A | | | | | | 120V/60Hz |
| | | 5301FB2059B | | | | 1 | | 230V/50Hz |
| | | 5301FB2059D | | | | | | 100V/50,60Hz |
| 6 | OVEN CASE ASM | 3111FB2057B | | | | 1 | | |
| 6-1 | RIM | 3062FB1037B | | | | 1 | NSP | |
| 6-2 | OVEN CASE-M | 3110FB1039A | | | | 1 | NSP | |
| 6-3 | OVEN CASE-L | 3110FB2056A | | | | 1 | NSP | |

| LOCA. No. | DESCRIPTION | PART No. | | | | Q'TY | SVC MARK | REMARKS |
|---|---|---|---|---|---|---|---|---|
| | | HB-150E | HB-151E | HB-152E | HB-153E | | | |
| 6-4 | HEATER HOLDER | 4930FB4072A | | | | 1 | NSP | |
| 6-5 | SCREW | 1MPC0402422 | | | | 1 | NSP | |
| 7 | SCREW | 1MPC0402222 | | | | 1 | NSP | |
| 8 | SCREW | 1TPL0402422 | | | | 1 | NSP | |
| 9 | SCREW | 1TPL0402422 | | | | 2 | NSP | |
| 10 | OUT CASE | 3112FB1038A | | | | 1 | NSP | |
| 11 | LEADWIRE ASM | 6877FB2067A | | | | 1 | | 120V/60Hz |
| | | 6877FB2067C | | | | | | 100V/50,60Hz |
| | | 6877FB2108A | | | | | | 230V/50Hz |
| | | 6877FB2108C | | | | | | 230V/50Hz(SWISS) |
| | | 6877FB2108D | | | | | | 230V/50Hz(U.K.) |
| 11-1 | BAKING SENSOR ASM | 6501FB3079A | | | | 1 | NSP | |
| 11-2 | FUSE BRACKET | 4810FB4074A | | | | | NSP | |
| 11-3 | POWER CORD ASM | 6411FB3082A | | | | 1 | NSP | 120V/60Hz |
| | | 6411FB3097A | | | | | NSP | 230V/50Hz |
| | | 6411FB3104B | | | | | NSP | 230V/50Hz(SWISS) |
| | | 6411FB3104C | | | | | NSP | 230V/50Hz(U.K.) |
| | | 6411FB3107A | | | | | NSP | 100V/50,60Hz |
| 11-4 | THERMAL FUSE | 0FBZFB3084A | | | | | NSP | |
| 12 | CHASSIS ASM | 3141FB2058A | | | | 1 | | NO TAPPING(120V) |
| | | 3141FB2058B | | | | | | TAPPING(230V) |
| 12-1 | PULLEY SHAFT ASM | 4371FB3078A | | | | 1 | | |
| 12-2 | OVEN BASE ASM | 3040FB5061C | | | | 1 | | |
| 12-2-1 | WASHER-X | 4O20017F | | | | 2 | NSP | |
| 12-2-2 | OILLESS BEARING | 4280FB4078A | | | | 1 | NSP | |
| 12-2-3 | OVEN BASE | 3040FB3077A | | | | 1 | NSP | |
| 12-3 | SCREW | 1TPL0402618 | | | | 3 | NSP | |
| 12-4 | E-RING | 4O80070A | | | | 1 | NSP | |
| 12-5 | CHASSIS | 3140FB1040A | | | | 1 | NSP | NO TAPPING(120V) |
| | | 3140FB1040B | | | | | NSP | TAPPING(230V) |
| 12-6 | KNEADING PULLEY | 4560FB2060A | | | | 1 | | |
| 12-7 | PULLEY WASHER | 4O80012A | | | | 1 | NSP | |
| 12-8 | NUT | 1NHA0500018 | | | | 1 | NSP | |
| 12-9 | MOTOR CUSHION | 4O80051A | | | | 3 | NSP | |
| 13 | SCREW | 1TTL0402622 | | | | 1 | | |
| 14 | CAPACITOR | 6120FB3087A | | | | 1 | | 10μF(120V) |
| | | 6120FB3078B | | | | | | 8μF(230V) |
| 15 | KNEADING MOTOR | 4681FB2012F | | | | 1 | | 120V/60Hz |
| | | 4681FB2012H | | | | | | 230V/50Hz |
| | | 4681FB2012K | | | | | | 100V/50,60Hz |

| LOCA. No. | DESCRIPTION | PART No. | | | | Q'TY | SVC MARK | REMARKS |
|---|---|---|---|---|---|---|---|---|
| | | HB-150E | HB-151E | HB-152E | HB-153E | | | |
| 16 | FIXING SCREW | 4000FB4022A | | | | 3 | | |
| 17 | SCREW | 1MPC0402618 | | | | 1 | NSP | |
| 18 | MOTOR PULLEY | 4O80018A | | | | 1 | | |
| 19 | V-BELT | 4400FB3086A | | | | 1 | | |
| 20 | BASE COVER | 3550FB2061A | | | | 1 | | |
| 21 | SCREW | 1TTL0402622 | | | | 2 | NSP | |
| 22 | LEG ASM | 4O80144B | | | | 4 | | |
| 22-1 | LEG | 4778FB4069A | | | | 4 | NSP | |
| 22-2 | SCREW | 4000FB4071B | | | | 4 | NSP | |
| | MEASURING CUP | 4080018A | | | | 1 | OPTIONAL | |
| | MEASURING SPOON | 4080080A | | | | 1 | OPTIONAL | |